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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/647,278      | 09/26/2000  | Janet M. Hock        | X-11965             | 5427             |

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[REDACTED] EXAMINER

LI, RUIXIANG

[REDACTED] ART UNIT      [REDACTED] PAPER NUMBER

1646

DATE MAILED: 08/12/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                         |                  |
|------------------------------|-------------------------|------------------|
| <b>Office Action Summary</b> | Application No.         | Applicant(s)     |
|                              | 09/647,278              | HOCK, JANET M.   |
|                              | Examiner<br>Ruixiang Li | Art Unit<br>1646 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 08 March 2002.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 17-55 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 17-55 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
 If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)                    4) Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_ .
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)                    5) Notice of Informal Patent Application (PTO-152)
- 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4 & 7.                    6) Other: \_\_\_\_\_ .

## DETAILED ACTION

### ***Preliminary Amendment***

1. Applicants' amendment filed on 09/26/2000 in paper No. 3 and on 05/15/2001 in Paper No. 5 is acknowledged. Claims 1-8 have been canceled. Claims 9-16, which were submitted in a preliminary amendment on 09/26/2000, have also been canceled. Claims 17-55 have been added and are under consideration. However, the amendment (filed on 09/26/2000) to page 47, line 7 could not be entered because "μg/kg/day" does not appear in that line.
2. Applicants' petition to correct inventorship under 37C.F.R. 1.48(b) filed on 2/5/2002 is acknowledged. However, applicants should file a petition to correct inventorship under 37C.F.R. 1.48(c) and must provide the following documents: (1) A request to correct the inventorship that sets forth the desired inventorship change; (2) A statement from each person being added as an inventor that the addition is necessitated by amendment of the claims and that the inventorship error occurred without deceptive intention on his or her part; (3) An oath or declaration by the actual inventors as required by §1.63 or as permitted by §§1.42, 1.43, or §1.47; (4) The processing fee set forth in §1.17(i); and (5) If an assignment has been executed by any of the original named inventors, the written consent of the assignee. It is noted, however, that item No. 2 is missing.

### ***Priority***

3. Acknowledgment is made of a claim for domestic priority under 35 U.S.C. 119(e) to provisional applications, 60/097,151 (filed on 08/19/1998) and 60/099,746 (filed on 09/10/1998).

***Claim Rejections—35 USC § 112, 2<sup>nd</sup> paragraph***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 17-55 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 32, 34, 42-52, 54, and 55 are indefinite because the claims recite the term, "less than about", which does not clearly define the lower limit of dosage of the parathyroid hormone. Claims 17-55 are indefinite because the dosage of human parathyroid hormone is not defined clearly in the claims. Is a bolus administration intended? Is the amount related to the body weight of a patient?

***Claim Rejections—35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 17-52, 54, and 55 are rejected under 35 U.S.C. 102(b) as being anticipated by Sone et al. (IDS No. AA: *Miner Electrolyte Metab.* 21:232-235, 1995).

Sone et al. teach the use of a small dose of human parathyroid hormone (1-34) without concurrent administration of an antiresorptive agent to stimulate bone formation and to increase bone mass in human patients with osteoporosis (See, e.g., Abstract; Patients and methods). At a dose of 6 µg (20 units) per day subcutaneously

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for 26 weeks (about 6.5 months; meeting the limitation that the PTH is administered for at least about 12 months up to 3 years), both bone mineral content and bone mineral density (BMD) in lumbar vertebrae have been increased significantly (Fig. 1a). The treatment also increased BMD of the cortical bone, metacarpal bone (Fig. 1b). The increase in bone mass and BMD reduces the risk of fracture of vertebral bone and non-vertebral bone, trabecular and cortical bone. The human subjects in the study of Sone et al. included sixteen patients with senile osteoporosis, 2 males and 14 females, aged at 71-88 (page 233, Patients and Methods). Thus, all the patients had osteoporosis arised from an age-related hypogonadal condition whereas the female patients were postmenopausal women.

It should be noted that the dosage of the parathyroid hormone is not defined unambiguously in the claims and that the amount ( $\mu\text{g}$ ) of a parathyroid hormone depends upon the purity, activity, and size of the hormone or its active fragments. In addition, the specific details listed in the preambles are not accorded patentable weight (e.g., the specific bone parts listed in Claim 36). Furthermore, A packaging material comprising a printed matter insert (see Claim 27) does not constitute a patentable subject matter. Finally, the instant invention appears to be drawn to a method of increasing bone toughness and stiffness and reducing fractures comprising administering a small dose of human parathyroid hormone. Thus, the reference by Sone et al. meets the limitations of Claims 17-52, 54, and 55.

8. Claims 17, 19, 21, 23, 25-28, 30, 32—36, 38-40, 42, 43, 45-47, and 49-55 are rejected under 35 U.S.C. 102(b) as being anticipated by Neer et al. (IDS No. AB, U.S. Patent No. 4,698,328, October 1987).

Neer et al. teach a method for increasing bone mass and trabecular bone density (Fig. 1) in a human afflicted with osteoporosis or a similar disease (bottom of column 3) comprises administering a parathyroid hormone with either vitamin D or calcium for at least 12 months (See, e.g., Abstract). Neer et al. teach the use of the parathyroid hormone and its active fragments, including PTH (1-34) and PTH (1-84) (column 4), and ranges of administration of human PTH (1-34) that are, for example, 100-700 units/day (claims 1 and 9), more preferably 200-600 units/day, and most preferably 400-500 units/day (top of column 5). Based upon the calculation that 400 units = $25\text{ }\mu\text{g}$ , 100-700 units/day is equivalent to 6.3-43.8  $\mu\text{g}/\text{day}$  whereas 400-500 units/day is equivalent to 25-31  $\mu\text{g}/\text{day}$ . Assuming the average body weight of a human subject is 60 kg, the dosage of the parathyroid hormone is far less than about 5  $\mu\text{g}/\text{kg}/\text{day}$ . Neer et al. teach that the method of treatment is intended to be used in all diseases classified as osteoporosis, such as postmenopausal osteoporosis, senile osteoporosis (bottom of column 3).

Since the increase in bone mass and bone mineral density necessarily reduces the risk of fracture of vertebral bone and non-vertebral bone, a packaging material comprising a printed matter insert (see Claim 27) does not constitute a patentable subject matter, and the specific details listed in the preambles are not accorded patentable weight (e.g., the specific bone parts listed in Claim 36), the reference by Neer et al. meets the limitations of Claims 17, 19, 21, 23, 25-28, 30, 32—36, 38-40, 42, 43, 45-47, and 49-55.

9. The prior art (Hodsman et al, J. Clinical Endocrinology and Metabolism, 82:620-628, 1997) not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ruixiang Li whose telephone number is (703) 306-0282. The examiner can normally be reached on Monday—Friday, 8:30 am—5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yvonne Eyler, can be reached on (703) 308-6564. The fax phone number for this Group is (703) 305-3014 or (703) 308-4242.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [yvonne.eyler@uspto.gov].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0196.

Ruixiang Li  
Examiner  
July 29, 2002



ELIZABETH KEMMERER  
PRIMARY EXAMINER